A Program Evaluation of An Animal Assisted Therapy Program

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Abstract

This program evaluation assesses the efficacy of an animal-assisted activity (AAA) program, *The Little Dog Laughed.* The program sets itself apart from animal-assisted therapy (AAT) programs in that its goal is to improve the client's life on a broader scale, whereas an AAT program has a more specific therapeutic goal in relation to an individualized care plan. The Little Dog Laughed uses animal-assisted activities in single and multiple visits depending upon the needs of the population served. The Little Dog Laughed serves a variety of populations: convalescence facilities; hospitals; schools; and domestic violence shelters, the latter being the sample population for this evaluation. Typically, when a population is involved with an animal-assisted therapy program, the interactive sessions are long-term and focus on the individual, both with respect to the objective goals and through the recording of progress. The Little Dog Laughed is an animal-activity program that uses dog training as a form for non-violent problem solving and life skills training. In conjunction with behavioral therapy professionals, this program gives opportunities for children of domestic abuse to interact with the dogs in short, 20-minute training sessions once a week. The children are introduced to a learning goal, provided guidelines for respectfully working with the dog, as well as tools (e.g., clickers and hand signals) to promote clear communication between the child and the trained dog model. **S**ee, **T**ag **A**nd **R**eward ("STAR"), the learning model for The Little Dog Laughed is consistent with the Positive Behavioral Intervention Supports (PBIS) plan used in schools for improving problem behavior. The two domestic violence shelters visited typically house families for 30 days or less, as the families may then elect to leave or are placed in a more permanent living situation. The opportunities to train and observe outcomes are limited both in terms of the length of each visit

as well as the number of visits each residence receives. Therefore evaluating individual outcomes for a program of this kind can be challenging. Rather than observe changes in behavior over the long-term, since this data is not available, we examine short-term improvement. Behavioral improvement was evaluated through focal observation every 5 minutes for the 15 to 20 minute training sessions over a 12-week period. Areas of improvement were put into categories based on six different learning and behavioral goals: Metacognition (i.e., introspection, perspective-taking, error management, etc.), Engagement (e.g., paying attention), Instruction Adherence, Concept Recognition, Attitude, and Affect (e.g., animated, outgoing, fearful, etc.). The results of this program evaluation will be discussed relative to these six outcome goals.

Keywords: animal-assisted therapy, animal-assisted activity, between-subjects, program evaluation

A Program Evaluation of An Animal-Assisted Therapy Program

In the mid-twentieth century, Boris Levinson made a remarkable discovery. At the time, Levinson was a psychology professor at Yeshiva University in New York City and was attempting to treat a challenging, non-verbal child (Parshall, 2003). He left his dog, Jingles alone with the child while he stepped out of the office for a few minutes. When Levinson reentered the office, the child was talking with the dog. This was after the boy had not spoken once over the previous month that Levinson had him as a patient (Parshall, 2003). This was the beginning of Boris Levinson's research on animal assisted therapy, and soon many researchers would follow his lead. Before this, the notion of animals contributing to a person's well being was well known, the research just had not been carried out to support it (Parshall, 2003). Dating back to the 1700's, ideas began to develop about how nurturing relationships with animals could serve a socializing function, especially for children (Serpell, 2006). In the 1830's, the British Charity Commission suggested that the grounds of a lunatic asylum be filled with sheep, hares, monkeys, or other social animals to create a less prison-like atmosphere (Serpell, 2006). In 1792, it was recorded that farm animals were present at a Quaker retreat in England to benefit the mental health of the residents, and again in 1867, farm animals were also used at a Bethel Community in Germany (Parshall, 2003). And in the United States, animals were first used therapeutically in the 1940's at an Air Force Convalescent Hospital in New York City. Clearly history has proven humans and animals have had a distinct bond dating back hundreds of years; however, through the literature, minimal documentation has shown animals are in fact beneficial to a person's mental or physical health (Parshall, 2003).

Despite this lack of research, some empirical support for the benefits of animal assisted programs does exist. In a study of social support on cardiac health by Freidmann, Katcher,

Lynch, and Thomas (1980), it was found that cardiac patients who owned pets outlived non-pet-owning cardiac patients. In this study, Freidmann and her colleagues looked at the effects of social isolation and social support on the survival of patients in a cardiac care unit (CCU). Because pets are a form of companionship, the association between pet companionship and survival were explored in the patients (Freidmann, 1980). To the researchers knowledge, this relationship had not been studied before and would shine some light on the positive effects animals have on patients (Freidmann, 1980). The study acted as motivation for the reexamination of the positive affects animals can have on human health and social support of the clients involved (Freidmann, 1980). Of the 92 patients in the study, 78 were still living one year after hospital admission and 58 percent of the subjects had one or more pets (Freidmann, 1980). Of the 39 patients that did not own pets, 11 died, and only 3 of the 53 pet owners died within 1 year (Freidmann, 1980). Since owning a dog can require more physical exertion and energy than other pets, a second comparison was made between patients who owned pets other than dogs and non-pet owning patients (Freidmann, 1980). 10 pet owners did not own dogs and none of these patients died, indicating the relationship between pet ownership and survival remained significant even after eliminating dog owners (Freidmann, 1980).

Freidmann also gives another explanation as to why pet and owner relationships can be beneficial to people in their every day lives. Not only does the pet give the owner attention, but it also gives the pet owner something to give attention to (Freidmann, 1980). Interactions between family members and even people outside of family can often times be loaded with indecision and negative emotional influence. There are times when people have to earn love or affection from another person through difficulty and sacrifice, or the love is just unavailable. Pets, on the other

hand, are a source of comfort and affection that can be received on the demand of the owner without bargaining or anything needed in return (Freidmann, 1980).

Not only does the person benefit from the relationship with his or her pet, but the animal also gains noticeable physiological reward. For example, Odendall (2000) examined levels of β-endorphin, oxytocin, prolactin, β-phenylethylamine, dopamine, and cortisol in humans and in dogs before and after an interaction. The results showed that β-endorphin, oxytocin, prolactin, phenylacetic acid (metabolite of β-phenylethylamine), and dopamine increased significantly while levels of cortisol decreased in the human participants, illustrating the benefits of animal assisted interventions (Odendall, 2000).

When addressing these types of animal intervention settings, it is important to make a clear distinction between the two main types of programs used in these different environments, animal-assisted therapy (AAT), and animal-assisted activity (AAA). Despite the obvious distinction, the word *therapy* is often times confused with situations where relief or improvement is provided, but whose specialist cannot credibly diagnose the client (Kruger & Serpell, 2006). AAT is a goal-oriented intervention in which animals fill specific requirements as a fundamental part of the treatment procedure (Palley, O'Rourke, & Niemi, 2010). AAT programs are run by professionals with expertise in the field and ample knowledge within the scope of their profession. The main goal of AAT is to promote growth and change in social, cognitive, emotional, and physical functioning (Palley, et. al., 2010). The programs can be carried out in a variety of settings and can be either group or individual based.   Therapy-based AAT is frequently used in health care facilities or laboratory settings. Professionals who suggest an AAT intervention should know not only which diseases and clients are most responsive, but also the appropriate type of animal, as well as the most effective duration of treatment (Palley et. al.,

2010). The successes of these programs reach many populations, including: persons with dementia, mental health or psychiatric disorders, heart disease, cancer, and developmental disabilities (Palley et. al., 2010). Following animal-assisted therapy, in-patient hospital residents show improvements in mood and other areas. For instance, adult hospitalized patients with congestive heart failure demonstrated lower levels of pulmonary capillary wedge pressure, systolic pulmonary artery pressure, anxiety, and catecholamine levels after visiting with a therapy dog and volunteer (Cole et al., 2007). Another therapy-based AAT program involving geriatric patients with dementia showed decreased agitated behaviors and increased social interaction (Perkins et al., 2008). Special needs classrooms also use therapy-based AAT to provide children with a non-judgmental participant, which can offer them emotional and social support in a therapeutic context (Friesen, 2010). Action-based AAT works on a slightly different model than therapy-based AAT. Therapy-based AAT is less hands-on than action-based, but through spending time with animals and not necessarily being actively involved with them, patients receive beneficial treatment (Friesen, 2010).

A typical AAT program is delivered through a longitudinal model that allows either the group or the client being treated to participate in numerous sessions over an extended period of time. In order to receive the most benefit from the program, the director and/or therapist should have an end goal determined and allow for sufficient time to work on any areas that need improvement in order to reach that goal. Depending on the age of the client, a session will typically last anywhere from fifteen to sixty minutes and may occur on a daily or weekly basis. In order to evaluate an AAT program, realistic and measurable goals and objectives must be established. Through extensive observation and data collection, the successes and failures of the program can be identified and addressed. Although long-term observations are more useful

when determining levels of efficacy in the programs, they can be difficult to accomplish when

working with transient or temporary populations. Some clients may only attend one or two

sessions, depending on the type of facility. For example, a homeless or domestic violence shelter

will often times house clients for 30 days or less, which does not allow as much observation time

as for example, patients in long-term care facilities. During inconsistent observation periods like

these, collecting enough data can be challenging. Without a sufficient amount of data, the

subject's level of improvement in specific areas becomes unclear. Also, the goals and objectives

that were set become less attainable. Some AAT programs present the therapy sessions as an

option for the clients, as opposed to a mandatory attendance, which can also create potential

problems during an evaluation because of inconsistency.

   Like Animal Assisted Therapy, Animal-Assisted Activity (AAA) programs provide the

opportunity for educational, recreational, and stimulating growth to improve quality of life

(Souter & Miller, 2007). However, as Mossello et al., (2011) explains, there is a difference

between the two. AAT programs have a more specific therapeutic goal in relation to an

individualized care plan, whereas AAA programs are more recognized for improving the client's

life on a broader scale (Mossello et al., 2011). AAA is used in variety of environments and is

carried out by trained professionals and/or volunteers with the animals that provide the services

needed (Souter & Miller, 2007). The goal of AAA is to improve the quality of living of different

types of people (terminally ill, victims of domestic violence, blind, and the elderly), while AAT

is the fundamental part of therapy for some disorders such as autism and depression (Caprilli &

Messeri, 2006).

   Anne Meyer Children's Hospital planned a project around AAA to improve the quality of

life of hospitalized and non-hospitalized children and their parents, knowing that pediatric pain

and anxiety can often times be treated with alternative techniques (Caprilli & Messeri, 2006). Animals can be used as a "therapeutic instrument" for children who are sick, as well as emotionally or physically disabled, through interacting with the animal and receiving noticeable benefits (Caprilli & Messeri, 2006). Caprilli and Messeri also found that human contact with animals could relieve the stress of separation and loneliness, and introduce a feeling of security and ease. The positive effects of relaxation have been observed in children who suffer from attention deficit hyperactivity disorder and autism. Relaxation increases self-esteem and ability to socialize and use language skills (Caprilli & Messeri, 2006). The aim of the project was to take dogs into the wards as support for the hospitalized children. There were three phases to the project, however the third phase was the only one evaluated, as phases one and two were preparatory (Caprilli & Messeri, 2006). The project was kept specifically out of any rooms where breastfed, newborns, and premature babies were being treated, as they were unable to physically interact with the animals (Caprilli & Messeri, 2006). The children's level of enjoyment and ability to participate was measured on various scales. The first was the self-assessment manikin (SAM), the second was three different behavioral scales, and the third was the analysis of the children's drawings. The SAM is a non-verbal, pictoral assessment design that measures pleasure associated with affective reaction to different stimuli (Caprilli & Messeri, 2006). There are five drawings of five people with different expressions, ranging from happy to sad (Caprilli & Messeri, 2006). Children were asked which picture best explained their current feeling. The SAM was shown to 28 children between the ages of 4 and 12 right after they spent time with the dogs, and it was shown to them again the next day at the same time (Caprilli & Messeri, 2006). Two independent observers completed the three behavioral scales during the child/animal meeting. The scales measured (i) child-animal interaction; (ii) child-environment

interaction; and (iii) the child's level of intellectual awareness (Caprilli & Messeri, 2006). The

drawings that the children created during the activity were also analyzed (Caprilli & Messeri,

2006). The SAM scale was used two different times to compare the presence and absence of

animals, and it was observed that after playing with the dog, the children described their

experience as positive, as opposed to when the dog was not present and they claimed to be

"unhappy" (Caprilli & Messeri, 2006). By looking at the three different scales of observation, it

was observed that child-animal interaction was 50 percent higher than the average score, and the

child's level of awareness was 60 percent higher when the dog was present (Caprilli & Messeri,

2006). The data concluded that the children in the hospital were more actively engaged with

both the dog and the surrounding environment during their visit with the animal. The data

collected from the children's drawings confirmed their interest in the animal when it was in close

range, by positive feelings shown in the drawings (Caprilli & Messeri, 2006). In an effort to

evaluate parental satisfaction of the project, a questionnaire was distributed. All 49 parents

supported the project and 94 percent thought the project was beneficial in engaging their child

(Caprilli & Messeri, 2006). Of the doctors and nurses in the children's hospital, 92 percent of

them supported the project "Pets in Hospital", with a small percentage raising concern that the

dogs may bite the children or bring disease into the hospital (Caprilli & Messeri, 2006). Overall,

the project was found to be beneficial for the children and satisfying for the parents and staff of

the hospital (Caprilli & Messeri, 2006). However, it was also concluded that a few changes

could be made in order to improve the efficiency of the project. It was discovered that it would

be easier if the parents were asked to leave the room during the child's meeting with the dog so

the children were able to better familiarize themselves with their surroundings (Caprilli &

Messeri, 2006). Also, more information was needed for the parents to better inform them about

the project and how to interact with the dogs. This would introduce better collaboration between the hospital staff and the parents (Caprilli & Messeri, 2006).

Through another evaluation of an AAA program, Mossello et al., (2011) performed a study involving dementia patients at an Alzheimer Day Care Center (ADCC). The purpose of the study was to evaluate the effects of AAA with dogs for older patients suffering from dementia living in an ADCC. In an effort to construct both a treatment and two control conditions, residents were provided a living dog as part of the AAA program, a plush dog as an active control, or no dog or change in the everyday ADCC activities (Mossello, et. al., 2011). A controlled, nonrandomized, repeated measure design was used and the observation times were divided into three sessions: two weeks' pre-intervention (usual day care activity, UDC), three weeks' control activity (CA), and three weeks' AAA (Mossello, et. al., 2011). Every subject went through a behavioral/psychological assessment before CA, at the end of CA before AAA, and at the end of AAA (Mossello, et. al., 2011). Also, emotional state, agitation, and behavior were measured during all three stages of the study by twice-a-week observations (Mossello, et. al., 2011). AAA and CA were provided to the whole group for roughly 100 minutes three times a week, with each session including an extra few minutes to introduce the client to the dog/plush-dog and 10 minutes of interaction (Mossello, et. al., 2011).   Depending on his or her cognitive functioning, each subject was invited to engage in a sequence of actions with the dog/plush-dog, including talking, stroking, playing, feeding, brushing, and walking (Mossello, et. al., 2011). Independent raters, all blinded to each other, performed three different evaluations: cognitive/behavioral/psychological assessment, observation of emotional state, and observation of agitation and motor behavior (Mossello, et. al., 2011). The outcome of the study supported the belief that interactions between humans and dogs may noticeably improve the emotional state

of older patients with dementia, activating positive emotions, and decreasing levels of anxiety (Mossello, et. al., 2011). There was a reported increase in positive attitude and a decrease in sadness among the clients during the AAA session compared with the CA period, as well as several hours after the session ended (Mossello, et. al., 2011).

Though studies of AAA programs have reported benefits, undertaking an evaluation of an AAA program can present challenges in terms of both data collection and consistency across behavioral measures. The purpose of this program evaluation is to identify the strengths and areas of improvement for The Little Dog Laughed Animal-Assisted Therapy Program (TLDL) through brief periods of observation. When working with a transient population such as the one looked at in this program evaluation, subjects may only reside at the facility for a maximum of two months and in some situations, no longer than a week. The short time span that the clients live at the shelters gives a small timeframe to collect data, making it difficult to observe behavioral changes over multiple sessions.

The Little Dog Laughed (TLDL) differs from typical animal-assisted intervention programs in its brevity of contact, making it an action-based animal-assisted activity (AAA) program in this context. The transitory nature of the shelters in which TLDL conducts their therapy provides a limited window for therapy to occur. Rather than having frequent, extended, and ongoing therapy over a period of months or years, children have comparatively heavily reduced contact time in which to receive benefits from this therapy. In a domestic violence setting, there are only one or two children present during a therapy session (per the counselor's request). Each child or pair of children is seen for less than 30 minutes once per week, and some children will only attend one or two sessions as many families do not remain in shelters for more than 30 days at a time. The child's participation in these sessions is optional, so the evaluators

are uncertain of whom they will observe on any given behavioral observation day. Because of limited potential contact the program must be more intensive and focused than many other animal-assisted therapy programs.   However, the limited contact time also works to the advantage of the program in some ways. It was observed that children involved in the TLDL program typically sustained attention for approximately 20 minutes, after which the attentional drop-off is significant enough that lessons aren't necessarily processed and learned. The short session time TLDL uses allows focused work to occur within the time frame that the children are able to absorb information, without wasting much time attempting to get children refocused after their attention has waned. In addition, the spaced-out, weekly sessions allow for some practice with memory and recall. Children are asked to recall information from their first sessions (in which they learned how to safely interact with the dog) and to recall information from intermediate sessions - for some children, this time span can be over a month and may span four or more sessions. In this way, the children recall their lessons and re-entrain them.

The Little Dog Laughed, Animal-Assisted Therapy Program is a program for school-aged children who are victims of abuse or have witnessed abuse. A major concern of the program is that children who have only just gotten home from school all day may not respond well to a program that is overtly school-like in style. Because of this, the program is designed to be didactic but not instructive and rigid. TLDL is designed in such a way that it does not seem like schoolwork to the children, which allows them to engage in the program in order to hold children's attention and teach them skills implicitly. TLDL provides entertainment in an post-school activity for children but also works to impart subtle lessons about non-violent problem solving, speaking clearly and letting one's voice be heard, and chunking large issues into smaller, more manageable steps to solve a larger problem. The program also emphasizes gentle,

safe, and respectful interactions with animals, and reinforces positive training and kind, effective communication skills. The age range of children who participate in the TLDL program can be anywhere from age 4-17, and the levels of comprehension of the program and its intentions vary accordingly.

Positive behavior interventions and supports (PBIS) models are typically three-tiered. The first tier targets all students using school- and classroom-wide systems. Approximately 80% of students will respond to this level of the model. Approximately 15% of students require more rigorous structure due to their at-risk behaviors; tier two involves working with these students in smaller group systems. The remaining 5 percent of students display high-risk behaviors and require a tier three, individualized system to manage their behavior (Sugai & Horner, 2002).

PBIS has been effective in alternative education settings, which cater to students with a wide variety of behavioral problems (Simonsen & Sugai, 2013). In addition, this model increases positive interpersonal skills and provides clear behavior expectations (Luiselli, Putnam, Handler & Feinberg, 2005). Unfortunately, only a small amount of research has been done at the classroom-level to identify problems with implementation of PBIS. A lack of perceived efficacy and experiences of emotional exhaustion decrease the ability of the educator to properly implement the PBIS model, even in cases where educators have appropriate knowledge and skills to use the strategy. Proper management of a classroom or learning setting to reduce educator burnout includes the use of clear and positively stated learning space expectations. (Reinke, Herman, & Stormont, 2012).

PBIS provides clear guidelines for use in educational settings. However, some of these guidelines are easier to follow than others. Such behaviors as posting positively stated rules and expectations are performed by a high number of educators. Other behaviors that require more

rigorous personal behavior, like monitoring and instructor, in particular, making certain to praise students after each behavior. It is important to raise educator efficacy so that these more behaviorally intensive components of PBIS are performed at the same level as easier-to-manage components (Reinke, Herman, & Stormont, 2012). The action of one educator under the PBIS model is not sufficient to produce desired outcomes. The PBIS model requires consistency in all levels of the educational system. Therefore, PBIS should be performed effectively in the classroom, by administrators, and, if possible, by after-school programs. (Lane, Menzies, Ennis, & Bezdek, 2013)

In the case of TLDL, a post school program, the use of the PBIS model is exceptionally important to keeping students on track. The use of PBIS in after-school programs in conjunction with PBIS as it is used in school, supports generalization by students of rules and expectations across settings. (Reinke, Herman, & Stormont, 2012). One of the ways it keeps students on track is by reducing punishment and increasing positive interactions and situations. This, in turn, lowers stress in children by decreasing the chance that the child will be punished or negatively treated. Lower levels of stress associated with school reduces dropout rate, reduces physical and mental health problems, and instills a more positive attitude towards school and education in children. (Reynolds, 2012)

Because of the unique nature of TLDL, there are a series of potential problems in evaluating this kind of program. The population observed during this program evaluation includes children who have witnessed or been involved in domestic violence. Given the transitory nature of domestic violence shelters, long-term observation of the resident's improvement is not possible. Typically animal-assisted therapy involves an individualized therapeutic program (ITP), but domestic violence shelters are emergency safe houses for families

in transition, so by definition a formalized ITP is not feasible. The best that can be done is set a weekly appointment and hope that when it comes time to work with the children it can be done. Visits can be cancelled if children or facilitators are sick, if the children do not wish to participate, or if a security threat has presented itself. This makes data collection difficult because there is no way to control which children will be participating, how many times they will be participating, or how much time passes between sessions. The lack of consistency makes it difficult to track progress over time, which is important when evaluating the effectiveness of a program.

In addition, because it is impossible to create consistency, large time lapses between sessions make it difficult to track long-term progress. Many of the TLDL sessions build off one another in a sequential order. When a large period of time has passed between sessions, it is easy for the child to forget what was previously learned. This again makes it difficult to track long-term progress, because it is unclear whether it is a failure of the program itself, or a result of the large lapse in time between each session in which no contact with the child has been made.

The best way to address these problems was to switch the focus of the evaluation from the long-term to the short-term. Rather than trying to measure a particular child's improvement over several sessions, the focus is placed on progress within an individual session. By using only individual sessions, the program evaluation is able to compensate for the problems previously mentioned. How often a child participates or the amount of time between sessions becomes a non-issue; the changes witnessed in a child during their session are the only relevant measurements. The focus on individual sessions also makes the most sense based on the environment that TLDL works in. If TLDL only works over a consistent long-term basis, then it would not be an effective program in such a transitory setting as a domestic violence shelter.

However, if there is evidence to illustrate TLDL is effective in the short-term, then it is likely to be beneficial for the children.

<center>**Evaluation Method**</center>

Target Population

The Little Dog Laughed, Animal-Assisted Therapy Program serves elementary schools, domestic violence shelters, hospitals, and assisted living facilities. For this evaluation, the evaluators observed children between the ages of 4 and 17 years (M=8.8) in two domestic violence shelters in northwest Oregon. Clients were seen individually or in groups of two or three children. The population involved in this type of program evaluation resides in a temporary or transient situation, such that a longitudinal evaluation is not possible. To protect the safety of the children and their families, we did not collect any identifying information other than first name, gender, age, and the child's behavior during the AAA sessions.

Design and Timeline

The aim of this program evaluation is to assess the efficacy of The Little Dog Laughed Animal-Assisted Therapy Program. The TLDL program is an animal-assisted activity designed to teach children social skills, empathy, non-violent problem solving, and the importance of making oneself heard and understood. The TLDL program uses trained Papillion therapy dogs, small dogs with natural "smiles," to present non-threatening animals to the children. Children are taught the basic principles of clicker-training, a form of operant conditioning. This method is then used to train the dog to learn new behavior as a means to teach non-violent problem solving and clear communication to the children. For this program evaluation, we used a between/within-subject design to evaluate the two temporary housing centers, where the residents were unable to be observed for an extended amount of time. Naturalistic, focal observations took place over a

nine-month period with weekly visits to each of the domestic violence shelters. Each animal-assisted activity session was 15-20 minutes. Each focal observation occurred over three to four 5-minute blocks. After meeting with the program director, the researchers identified six learning and behavioral realms: Metacognition, Engagement, Follows Instructions, Concept Recognition, Attitude, and Affect. This program evaluation will ultimately be longitudinal, as we anticipate a five-year observation and evaluation period. This report reflects the first nine-month period of observation.

Procedure

Through the method of naturalistic observation, two behavioral recorders observe and record all of the interactions between the children, the volunteer facilitator, and the director of the program. The behavioral interactions are framed as lessons for the therapy dog and last approximately 20 minutes. Behavioral observations and recordings are based on four five-minute focal sessions. Based on the six broad categories of behavioral improvement, each behavior is recorded in one of the six areas: Metacognition, Engagement, Recognition of Instruction, Concept Recognition, Attitude, and Affect. They are coded both quantitatively with a Likert-like scale and qualitatively with descriptions and explanation. The category of Meta-cognition defines all perspective-taking behavior, such as demonstrations of empathy or a respect for boundaries. Engagement describes the degree to which the child is actively engaged in the task, if they are inquisitive and interested. It was also noted if the child was derailed or disinterested because of various distractions. Recognition of Instruction is the degree to which instructions are followed. Concept Recognition reflects a deeper processing of the instruction, the degree to which a child recognizes their errors in following instruction, their recollection of the purpose of the task, their ability to generalize the instruction in an applied way and their

ability to remember the concept in later sessions. There are two emotional categories: Attitude and Affect. Attitude describes the overt behavior toward the dogs, the volunteers, and the exercises in each focal session, while the Affect behavioral category is a reflection of the apparent emotional state of the child during a focal session (e.g., warm, discontent, hostile, etc.).

Results

In an effort to assess significant changes in behavior between the four, 5-minute blocks via the six categorical target constructs; Metacognition, Concept Recognition, Engagement, Follows Instructions, Affect, and Attitude; we conducted a paired samples t-test and found that for five of the six behavioral categories there were significant behavioral improvements for our initial evaluation. We assessed these changes within one-session intervals by comparing scores in each of the four blocks to scores in the other blocks within individual sessions. We conducted five analyses for each main category, comparing Block 1 to Block 2, Block 2 to Block 3, and Block 3 to Block 4, a more "longitudinal" comparison of Block 1 to Block 4, and an additional "longitudinal" comparison of Block 1 to Block 3 (because some sessions did not last until block 4.) We conducted a paired samples t-test and found significant behavioral improvements in every category except Metacognition, which proved to be challenging to measure due to the observation style and limited time frame during the observation periods.

The data collected in the Engagement category showed significant results between Block 1 and Block 2 ($p=.027$, $\delta= .07$), between Block 1 and Block 4 ($p=.011$, $\delta=.18$), and between Block 1 and Block 3 ($p<.01$, $\delta=.21$). In the category Follows Instruction, there were significant results between the following blocks: Block 1 and Block 2 ($p=.001$, $\delta= .17$), Block 2 and Block 3 ($p=.024$, $\delta= .10$), Block 1 and Block 4 ($p=.030$; $\delta= .17$), and Block 1 and Block 3 ($p<.01$, $\delta=.31$). Concept Recognition showed significant results between Block 1 and Block 2 ($p=.008$, $\delta= .13$),

Block 3 and 4 ($p<.01$, $\delta= .21$), Block 1 and Block 4 (, $p<.01$, $\delta= .39$), and Block 1 and Block 3

($p<.01$, $\delta= .18$). In the category Attitude, there were significant results between Block 1 and

Block 2 ($p=.01$, $\delta= .12$), Block 2 and Block 3 ($p<.01$, $\delta= .25$), Block 1 and Block 4 ($p<.01$, $\delta=$

.28), and Block 1 and Block 3 ($p<.01$, $\delta= .38$). Affect showed significant results between Block

1 and Block 2 ($p<.01$, $\delta= .37$), Block 2 and Block 3 ($p<.01$, $\delta= .24$), Block 1 and Block 4 ($p<.01$,

$\delta= .39$), and Block 1 and Block 3 ($p<.01$, $\delta= .46$). See the mean target behavior ratings for all

categories in Figure 1.

Discussion

A program evaluation of The Little Dog Laughed Animal-Assisted Therapy Program

(TLDL) was implemented to measure the success of short bouts of action-based animal assisted

activity (AAA) to children in domestic violence shelters. An aim of TLDL is to nurture empathy

and non-violent problem solving skills in school-aged children who are victims of abuse or have

witnessed abuse. Children in domestic violence shelters are often limited in the length of time

they are housed, most moving on within a week to two months. The short time frame for

measuring the effects of AAA on this population required the creation of a more flexible

program evaluation. The evaluators identified six learning and behavior realms. The program

evaluation uses a within/between subject design to measure changes from the beginning to the

end of a session, and improvements over the span of multiple sessions. Sessions lasted 15-20

minutes in length, with a variety of 3-5 minute activities for the child and dog to learn.

This data demonstrates that brief bouts of Animal-Assisted Activities (AAA) can be

evaluated in a meaningful, clinically relevant way. The within-block behavioral improvement

can be used to compare differences in both cross-sectional and longitudinal designs. Data from

individual points in time throughout the session were simultaneously compared to data from the

beginning of a session to then end of a session. This methodology could be used for transient populations in clinical settings with brief bouts of animal assisted activities including hospitals, schools, and assisted living facilities. All of these settings would benefit more from shorter, less structured AAA's, as opposed to the long-term, more structured nature of animal assisted therapy. Results indicate that a child attending a single session with TLDL will show significant improvements in five of the six learning and behavioral realms (i.e., Engagement, Following Instructions, Concept Recognition, Attitude and Affect).

Some limitations in doing a program evaluation of AAA include limited access to background information of the clients, which can lead to unknown confounds in data collection. For example, if an AAA program was implemented into an emergency domestic violence shelter, because of the privacy required to ensure the safety of the clients, it would be impossible to know any background information, or other activities that the client is a part of that could affect the data. Another limitation is the difficulty in tracking changes over time. Animal assisted activities are much less structured than their therapy counter parts. This lack of structure makes it difficult to track long term progress because there is no guarantee that a client will be seen more than one time and even if the client is seen more than one time, there is no way to predict how much time will pass between sessions. In addition, it is difficult to determine how long measured improvement from the animal assisted activities within a client will last. Even if the data collected illustrates significant improvements in the six main categories (meta-cognition, engagement, follows instructions, concept recognition, attitude and affect), it is difficult to know how long the improvement lasts. Without a control, it is difficult to separate the effectiveness of the lessons the program is teaching from the effect of a dog being present. Essentially as program evaluators we are unable to determine if the measured improvement is due to the lessons being

taught by the program itself, or if the measured improvement is due to the positive association with an animal. This is important information to know when conducting a program evaluation to determine the effect of the lesson in isolation. Further program evaluations of TLDL should also incorporate a measurement system for the dog therapist in order to properly assess the effectiveness of particular learning models. This is of particular importance as the relationship between the therapist and the child is crucial for the TLDL program.

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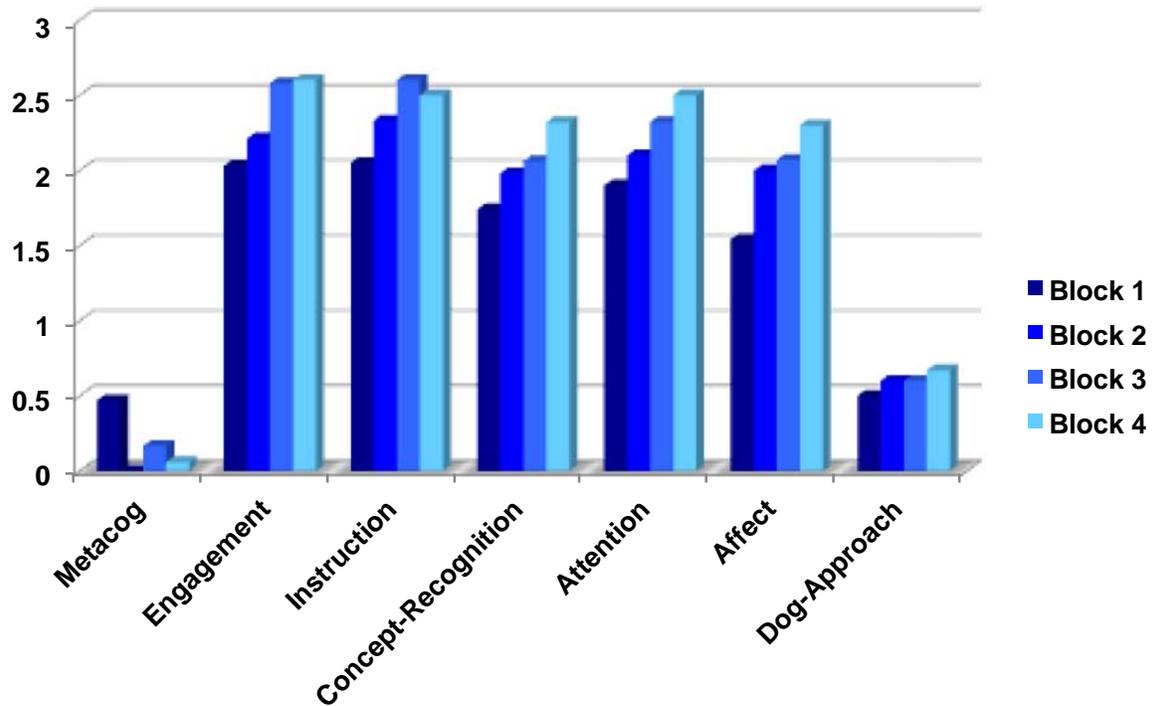
Figure 1. Mean Target Behavioral Ratings Within Four 5-Minute Blocks. Note the relative lack of ratings for Metacognition as compared to the other 5 main categories. This is likely due to the fact that instances of Metacognition are not easily observable by researchers, at least not within the limited time frame given for observation.